

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/078041 A1

- (51) International Patent Classification⁷: **C09K 3/14**
- (74) Agents: **DONALD, Heater, June** et al.; Spoor & Fisher, P.O. Box 41312, Craighall, 2146 Morningside (ZA).
- (21) International Application Number:
PCT/IB2005/000056
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 13 January 2005 (13.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
S2004/0024 15 January 2004 (15.01.2004) IE
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **ELEMENT SIX LIMITED** [IE/IE]; Shannon Airport, County Clare (IE).
- (71) Applicant (*for MW only*): **DONALD, Heather, June** [ZA/ZA]; Rochester Place, 173 Rivonia Road, 2057 Morningside (ZA).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **EGAN, David, Patrick** [IE/IE]; Berra, Kilkishen, County Clare (IE). **ENGELS, Johannes, Alexander** [ZA/IE]; Clonbunny, Newport, County Tipperary (IE). **FISH, Michael, Lester** [GB/IE]; Solas, Ballaghboy, Ennis, County Clare (IE).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: COATED ABRASIVES

(57) Abstract: A coated super-hard abrasive comprises a core of super-hard abrasive material, which is typically diamond or cBN based, an inner layer of a metal carbide, nitride or carbonitride chemically bonded to an outer surface of the super-hard abrasive material and an outer layer of tungsten physically deposited on the inner layer. The inner layer is preferably a titanium carbide coating in the case of a diamond abrasive core, or a titanium nitride or boride coating in the case of a cBN abrasive core.

WO 2005/078041 A1